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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
HUFFMAN, JULIAN D	

ART UNIT	PAPER NUMBER
2853	

DATE MAILED: 05/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/631,332	DAVIS ET AL.
	Examiner	Art Unit
	Julian D. Huffman	2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) *7-9,17 and 19-23* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,10-16,18 and 24-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of species 2 in the reply filed on 25 April 2005 is acknowledged. Claims 7-9, 17 and 19-23 are withdrawn from consideration as being directed towards a non-elected invention. Claims 17 and 19-23 are not generic as stated in the restriction requirement. Claims 19-23 depend from claim 8, which is directed towards nonelected species 1. Claim 17 relates to pressure detection by a pressure sensor and is directed towards the embodiment of species 1.

Claim Objections

2. Claims 30 and 32 are objected to because of the following informalities:

In claims 30 and 32, the phrase "ink supply reservoir" lacks antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another file d in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-4, 6, 10, 11, 13, 14, 18, 24, 26 and 29-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Okamoto et al. (US 20020012030 A1).

With regards to claim 1, Okamoto et al. discloses a pen maintenance system, comprising:

a pen (fig. 2, element 20) having a printhead (fig. 1, element 20a) and a chamber for holding ink (fig. 2, element 20, section 0089, head and tank form an integral ink jet cartridge);

a supply of ink (fig. 2, element 22, section 0094, ink supply means 21 supplies ink from ink tank 22 to cartridge 20);

a sensor for monitoring changes in the amount of ink in the chamber (fig. 1, element 25, section 0122, control means counts number of ink droplets ejected to determine amount of ink in chamber and functions as a sensor); and

a pump (fig. 2, element 31) connected to the chamber for changing the pressure in the chamber to selectively draw ink into or expel ink from the chamber (section 0122-0124).

With regards to claim 2, Okamoto et al. discloses the pen maintenance system of claim 1 including an ink supply reservoir (fig. 2, element 22) separate from the pen (supply 22 is separate from pen as clearly shown in fig. 2).

With regards to claim 3, Okamoto et al. discloses that the pump (31) is selectively placed in fluid communication with the chamber (section 0123, pump only operates when printhead is selectively moved over cap and cap is sealed to printhead).

With regards to claim 4, Okamoto et al. discloses that the pump is for decreasing the pressure in the chamber (section 0124, interior of storage tank is set at negative pressure).

With regards to claim 6, Okamoto et al. discloses a method for maintaining a pen, comprising the steps:

(a) connecting a pump (fig. 2, element 31) to a pen (element 20) having an ink chamber (section 0123); and

(b) operating the pump to modify the pressure in the chamber to thereby modify the amount of ink in the ink chamber (section 0124).

With regards to claim 10, Okamoto et al. discloses the step of detecting a fluid level in the ink chamber (section 0122, control means counts number of ink droplets ejected to determine amount of ink in chamber and operates as a sensor).

With regards to claim 11, Okamoto et al. discloses that operation of the pump is initiated upon detection of a change in fluid level in the ink chamber (section 0122).

With regards to claim 13, Okamoto et al. discloses that operation of the pump causes ink to flow into the ink chamber from an ink source (section 0124).

With regards to claim 14, Okamoto et al. discloses the step of fluidly connecting the ink chamber to the ink source (section 0123, by moving cap member against recording head, ink chamber is connected to ink source).

With regards to claim 18, Okamoto et al. discloses that the pump changes the pressure in the ink chamber to cause ink to flow out of the ink chamber (sections 0128 and 0129, pump functions as a suction means for sucking ink out of the chamber in a cleaning or recovery operation).

With regards to claim 24, Okamoto et al. discloses the step of moving the pen into fluid communication with an ink supply and wherein the pump causes ink to flow into the ink chamber (section 0123).

With regards to claim 26, Okamoto et al. discloses a pen maintenance apparatus, comprising:

a pen (fig. 2, element 20) having an ink reservoir (fig. 2, element 20, section 0089, head and tank form an integral ink jet cartridge) and sensor (fig. 1, element 25) that detects the amount of ink in the reservoir (section 0122, control means counts number of ink droplets ejected to determine amount of ink in chamber and operates as a sensor);

an ink supply (fig. 2, element 22) that supplies ink to the reservoir (section 0124); and

a pump (fig. 2, element 31) for modifying the pressure in the reservoir to selectively expel ink from the reservoir or to cause ink to enter the reservoir (section 0124).

With regards to claim 29, Okamoto et al. discloses a pen maintenance system, comprising:

a pen (fig. 2, element 20) having a printhead (fig. 1, element 20a) and an ink chamber (fig. 2, element 20, section 0089, head and tank form an integral ink jet cartridge);

a sensor (fig. 1, element 25) for monitoring the amount of ink in the ink chamber (section 0122, control means counts number of ink droplets ejected to determine amount of ink in chamber and operates as a sensor);

a pump (fig. 2, element 31) fluidly coupled to the ink chamber (section 0123);

an ink supply having a cap (fig. 6, element 38a, section 0123, cap is a part of the ink supply) defining a seat configured to receive the printhead so as to define a seal between the printhead and the cap (section 0123, cap seals printhead, otherwise pump would not function properly and/or ink would spill during refilling and the pen would dry out when the printer is not in operation);

wherein ink may selectively be expelled from the pen and into the ink supply (the cap, pump, ink supply means and ink refilling tank all constitute an ink supply since they function together to enable ink to be supplied to the ink chamber, since ink is selectively expelled from the pen into the cap, which is a part of the ink supply, then ink is selectively expelled from the pen into the ink supply), and introduced to the pen from the ink supply through the printhead by operation of the pump (operation of the pump causes ink to feed into the printhead from the refilling tank 22 through the supply means 21).

With regards to claim 30 the pen is selectively fluidly connectable to the ink supply reservoir and the pump is configured for altering the pressure in the ink chamber (section 0123) to either cause ink from the ink supply reservoir to flow into the ink chamber (ink flows from refilling tank 22 through supply means 21 to ink chamber 20), or cause ink to flow from the ink chamber to the ink supply reservoir (ink flows from chamber to cap which is a part of the ink supply reservoir).

With regards to claim 31, Okamoto et al. discloses an actuator (element 25) for selectively moving the pump into and out of fluid communication with the ink (section 0123).

With regards to claim 32, Okamoto et al. discloses an actuator (element 25) for selectively moving the ink supply reservoir into and out of fluid communication with the printhead (section 0096, controller 25 moves carriage).

5. Claims 1-6, 10-14, 18, 26 and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Ogawa et al. (U.S. 6,517,189 B2).

With regards to claim 1, Ogawa et al. discloses a pen maintenance system (fig. 1, abstract), comprising:

a pen (fig. 1, element 1) having a printhead (element 1) and a chamber (element 32) for holding ink (column 4, lines 44-50);

a supply of ink (fig. 1, element 10);

a sensor (fig. 1, element 15) for monitoring changes in the amount of ink in the chamber (column 4, lines 63-67); and

a pump (element 11 or 22, there are two pumps, pump 22 decreases pressure in reservoir to expel ink from reservoir in a purging operation, while pump 11 increases pressure in reservoir to refill reservoir from an ink tank 10, the present claims do not claim a single pump for performing both operations, thus for claim limitations directed towards increasing pressure or refilling, pump 11 satisfies these limitations, while for claim limitations directed towards decreasing pressure or purging, pump 22 provides these claim limitations) connected to the chamber (pumps are fluidicially connected to chamber during operation, see fig. 2) for changing the pressure in the chamber (pump 22 decreases pressure in chamber, while pump 11 increases pressure in chamber, column 9, lines 2-5, and column 7, lines 50-52) to selectively draw ink into (column 9, lines 2-5, pump 11 draws ink into chamber) or expel ink from the chamber (column 7, lines 50-52, pump 22 expels ink from chamber).

With regards to claim 2, Ogawa et al. discloses an ink supply reservoir separate from the pen (fig. 1, supply 10 is separate from pen 1).

With regards to claim 3, the pump is selectively placed in fluid communication with the chamber (pump 11 has a valve 40 which only fluidically couples pump to chamber when ink is being refilled, see column 6, lines 54-56, while pump 22 is only in fluid communication with chamber when print head 1 is moved over cap 21 and sealed, column 6, lines 49-67).

With regards to claim 4, the pump (element 22) is for decreasing the pressure in the chamber (pump 22 decreases pressure in chamber, 7, lines 50-52).

With regards to claim 5, the pump (element 11) is for increasing the pressure in the chamber (pump 11 increases pressure in chamber, column 9, lines 2-5).

With regards to claim 6, Ogawa et al. discloses a method for maintaining a pen (fig. 1, element 1), comprising the steps:

(a) connecting a pump (element 11) to a pen having an ink chamber (fig. 4a, steps S4-S8, column 6, lines 49-67); and

(b) operating the pump to modify the pressure in the chamber to thereby modify the amount of ink in the ink chamber (step S9 column 7, lines 1-6, column 9, lines 1-5).

With regards to claim 10, Ogawa et al. discloses the step of detecting a fluid level in the ink chamber (fig. 4a, step S2, column 6, lines 36-39).

With regards to claim 11, Ogawa et al. discloses that operation of the pump is initiated upon detection of a change in fluid level in the ink chamber (column 6, lines 36-39).

With regards to claim 12, Ogawa et al. discloses the step of detecting the fluid level in the ink chamber includes the step of providing a fluid level sensor in the ink chamber (fig. 5, element 70, column 9, lines 23-30, additional sensor 70 is provided in the chamber, both sensors 15 and 70 detect the fluid level).

With regards to claim 13, Ogawa et al. discloses that operation of the pump causes ink to flow into the ink chamber from an ink source (ink source 10, column 9, lines 2-7).

With regards to claim 14, Ogawa et al. discloses the step of fluidly connecting the ink chamber to the ink source (S8, valve is opened to connect ink chamber to ink source, column 6, lines 60-67).

With regards to claim 18, Ogawa et al. discloses that the pump (second pump, fig. 1, element 22), changes the pressure in the ink chamber to cause ink to flow out of the ink chamber (column 7, lines 50-52).

With regards to claim 26, Ogawa et al. discloses a pen maintenance apparatus, comprising:

a pen (fig. 1, element 1) having an ink reservoir (fig. 1, element 32) and sensor (element 15) that detects the amount of ink in the reservoir (column 4, lines 63-67);

an ink supply (fig. 1, element 10) that supplies ink to the reservoir (column 7, lines 1-3); and

a pump (element 11 or 22) for modifying the pressure in the reservoir to selectively expel ink from the reservoir (pump 22 expels ink from reservoir, column 7, lines 50-51) or to cause ink to enter the reservoir (pump 11 causes ink to enter reservoir, column 7, lines 1-3 and column 9, lines 2-5).

With regards to claim 28, the pen includes nozzles (fig. 1, element 2), and wherein operation of the pump increases the pressure in the reservoir to cause ink to flow through the nozzles and out of the reservoir (column 8, lines 45-55, during a high pressure purge operation, both pumps 11 and 22 are operated simultaneously to purge ink from reservoir through nozzles, pump 11 increases pressure in reservoir and pushes ink through nozzles in this mode of operation).

6. Claims 1-4, 6, 10-16 and 24-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Lorenze, Jr. et al. (U.S. 5,663,754).

With regards to claim 1, Lorenze discloses a pen maintenance system (fig. 2), comprising:

a pen (fig. 2, element 12) having a printhead (fig. 2, element 20) and a chamber for holding ink (element 22);

a supply of ink (fig. 2, refill container 42);

a sensor for monitoring changes in the amount of ink in the chamber (column 4, lines 4-20); and

a pump (element 60, column 3, lines 58-60, syringe is a pump, or fig. 4, element 94, wherein in an alternate embodiment, pump is provided in refill container 42) connected to the chamber for changing the pressure in the chamber to selectively draw ink into or expel ink from the chamber (column 4, lines 4-20, pump generates negative pressure when operator fluidly connects it to chamber).

With regards to claim 2, Lorenze discloses an ink supply reservoir separate from the pen (reservoir 42 is separate from pen).

With regards to claim 3, Lorenze discloses that the pump is selectively placed in fluid communication with the chamber (in the embodiment of fig. 2, the user places the pump in communication with the chamber when the ink level is low, column 4, lines 4-20)..

With regards to claim 4, Lorenze discloses that the pump is for decreasing the pressure in the chamber (syringe is pulled during refill operation to decrease pressure in chamber in embodiment of fig. 2, column 4, lines 14-20).

With regards to claim 6, Lorenze discloses a method for maintaining a pen, comprising the steps:

(a) connecting a pump (fig. 2, elements 60 or 94) to a pen (fig. 2, element 12) having an ink chamber (element 22); and

(b) operating the pump to modify the pressure in the chamber to thereby modify the amount of ink in the ink chamber (column 4, lines 14-20).

With regards to claim 10, Lorenze discloses the step of detecting a fluid level in the ink chamber (column 4, lines 4-20).

With regards to claim 11, Lorenze discloses that operation of the pump is initiated upon detection of a change in fluid level in the ink chamber (column 4, lines 4-20).

With regards to claim 12, Lorenze discloses the step of detecting the fluid level in the ink chamber includes the step of providing a fluid level sensor in the ink chamber (see fig. 2, element 34 of U.S. 5,136,305, incorporated by reference in the '754 patent, as stated on column 4, lines 4-6).

With regards to claim 13, Lorenze discloses that operation of the pump causes ink to flow into the ink chamber (22) from an ink source (source 42, column 4, lines 4-20).

With regards to claim 14, Lorenze discloses the step of fluidly connecting the ink chamber to the ink source (column 4, lines 4-20, operator connects).

With regards to claim 15, Lorenze discloses that the pen includes nozzles (fig. 2, element 26) and ink flows into the ink chamber through the nozzles (column 4, lines 4-26).

With regards to claim 16, Lorenze discloses that the pump reduces pressure in the ink chamber to cause ink to flow into the ink chamber through the nozzles (column 4, lines 4-20, negative pressure is applied).

With regards to claim 24, Lorenze discloses the step of moving the pen into fluid communication with an ink supply (42) and wherein the pump causes ink to flow into the ink chamber (column 4, lines 4-20).

With regards to claim 25, Lorenze discloses that the pen includes nozzles and wherein ink flows into the ink chamber through the nozzles (column 4, lines 4-26).

With regards to claim 26, Lorenze discloses a pen maintenance apparatus (fig. 2), comprising:

a pen (fig. 2, element 12) having an ink reservoir (22) and sensor that detects the amount of ink in the reservoir (column 4, lines 4-20);

an ink supply (42) that supplies ink to the reservoir (column 4, lines 4-20); and

a pump (fig. 2, syringe 60 is a pump, or in fig. 4, alternate embodiment uses pump 94) for modifying the pressure in the reservoir to selectively expel ink from the reservoir or to cause ink to enter the reservoir (pump causes ink to enter reservoir, column 4, lines 4-20).

With regards to claim 27, Lorenze discloses that the pen includes nozzles (fig. 2, element 28), and wherein operation of the pump decreases the pressure in the reservoir (column 4, lines 4-20, syringe produces negative pressure) to cause ink to flow from the ink supply through the nozzles and into the reservoir (column 4, lines 4-26).

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian D. Huffman whose telephone number is (571) 272-2147. The examiner can normally be reached on 9:30a.m.-6:00p.m. Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JH
4 May 2005

K. FEGGINS
PRIMARY EXAMINER